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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,519	03/03/2005	Ralf Kukla	P16854-US1	8325

27045 7590 11/10/2005

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EXAMINER	
NGUYEN, LINH V	
ART UNIT	**PAPER NUMBER**
2819	

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/526,519	KUKLA ET AL.	
	Examiner	Art Unit	
	Linh V. Nguyen	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-24,27,29-33 and 36* is/are rejected.

7)☒ Claim(s) *25,26,28,34,35 and 37-39* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/3/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to preliminary filed on 3/3/05. Claims 21 - 39 are pending on this application.

Abstract

2. An abstract on a separate sheet is required. Please provide a separate sheet of abstract in response to this office action.

Specification

3. Please insert a **cross-reference related-application** section under the title of the specification for continuing data of this application.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 21 – 24, 27, 29, 30 – 33 and 36 are rejected under 35 U.S.C. 102(b) as being anticipated Kajita et al. European Patent No. 1,111,797.

Regarding claim 21, Fig. 3 and 4 of Kajita et al. discloses a method for use in a digital communication (page 2 line 5) for interleaving input data (page 2 lines 24), having K>=, 2 bits (page 2 lines 33 - 34) according to an interleaved scheme (IL) into an interleave sequence (Fig. 4), said method including the steps of: a) storing the input sequence in a first memory means (Fig. 3 [101]); b) generating first indices (Fig. 4["r+R'c"; "r", "c"]) of N succeeding bits of the interleaved sequence, c) converting according to an inverse of said interleaving scheme, said first indices into second indices (figure 4: "C"Mii_row[r]+Mil col[c]"; "Mil row[r]", "Mil col[c]") indicative of the positions where said N succeeding bits of the interleaved sequence are stored in said first memory means (Fig. 3[101]), d) reading out said N succeeding bits from said positions in said first memory means, thereby generating at least part of said interleaved sequence (page 4 lines 39 – 40).

Regarding claim 22, wherein said first memory means (101) is organized in a matrix form comprising rows and columns (102, 103), - said first indices comprise first row indices (r) and first column indices (c), - said second indices comprise second row indices (Mil_row[r]) and second column indices (Mil_col[c]), and wherein said step of converting includes: - converting said first row indices (r) into said second row indices (Mil row[r]) so that inter-row permutation operations according to said interleaving scheme are performed when said step of reading out is executed (page 4, lines 11-15), - converting said first column indices (c) into said second column indices (Mil_col[c]) so that intra-row permutation operations according to said interleaving scheme are performed when said step of reading out is executed (page 4, lines 17-20).

Regarding claim 23, wherein said step of converting said first row indices includes: storing at least one permutation pattern ("row pattern") defining said inter-row permutation operations in a second memory means ("row pattern memory" (102)), - addressing said second memory means with addresses depending on at least said first row indices, thereby causing said second memory means to output said second row indices (page 4, lines 11-15).

Regarding claim 24, wherein said step of converting said first column indices includes (page 4, lines 33-40): converting said first column indices (c) and said second row indices (r) into said second column indices (Mil col[c]) so that intra-row permutation operations depending on a row index are performed when said step of reading out is executed (page 4, lines 17-20).

Regarding claim 27, wherein N ("Mil row[r]", "Mil col[c]") is selected to have a value of K (In [x]), and wherein said first memory means (101) is adapted to generate said interleaved sequence (ST203) when said N succeeding bits ("Mil row[r]", "Mil col[c]") are read out from said positions (Fig. 4)

Regarding claim 29, wherein steps of generating and converting (Fig. 4) are executed at least partially, before said step of storing (101, 104) where the address (105) in the matrix are calculated before storage (104).

Regarding claims 30 – 33, the claims incorporated the same subject matter as of claims 21 – 34, respectively, and rejected along the same rationale.

Regarding claim 36, the claim incorporated the same subject matter as of claims 29 and rejected along the same rationale.

Allowable Subject Matter

6. Claim 25, 26, 28, 34, 35, and 37 – 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding to claim 25 and 34, the prior art does not teach or suggest wherein said step of converting said first column indices comprises the steps of: determining base sequence indices depending on said first column indices and said second row indices by adding index increments depending on said second row indices to previously determined base sequence indices; and determining said second column indices on the basis of at least said first column indices and said base sequence indices.

Regarding to claims 28 and 37, the prior art does not teach or suggest wherein N is selected to have a value of K/M with M > 2 denoting a sub-sampling factor, and wherein said first memory means is adapted to generate an output sequence representing one of M polyphases of said interleaved sequence when said N succeeding bits are read out from said positions.

Prior Art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linh Van Nguyen whose telephone number is (571) 272-1810. The examiner can normally be reached from 8:30 – 5:00 Monday-Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Robert Pascal can be reached at (571) 272-1769. The fax phone numbers for the organization where this application or proceeding is assigned are (571-273-8300) for regular communications and (571-273-8300) for After Final communications.

11/3/05

Linh Van Nguyen

Art Unit 2819